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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
FAULK, DEVONA E	

ART UNIT	PAPER NUMBER
2644	

DATE MAILED: 12/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/933,626	LIGHT ET AL.	
	Examiner	Art Unit	
	Devona E. Faulk	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) *2,4,13 and 29* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5-12,14-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 8/9/2004, with respect to the rejection(s)of claim(s) 1,2,8,9 and 11 under 102 (b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the MPEP 2144.04 states that the court has affirmed that is a matter of obvious engineering choice whether to integrate elements of a structure (See section part (B) under section V. Making Portable, Integral, Separable, Adjustable, or Continuous).

2. Applicant's arguments filed 8/9/2004, with respect to the rejection(s)of claim(s) 3.5-7,10,12 and 14-28 under 103 (a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the MPEP 2144.04 states that the court has affirmed that is a matter of obvious engineering choice whether to integrate elements of a structure (See part (B) under section V. Making Portable, Integral, Separable, Adjustable, or Continuous).

3. Applicant's arguments filed 8/9/2004, with respect prior art Rast has been considered but is not persuasive. The applicant asserts, on page 11, that Rast does not each that a user specifies a relationship to be used when mixing audio signals. The examiner asserts that Rast does disclose this claim language (paragraphs 53 and 61). Therefore, the examiner is maintaining any rejections made with prior art Rast.

4. Applicant's arguments filed 8/9/2004, with respect to other prior art , Sugihara, Neoh and Soli (pages 12-15have been considered but is not persuasive. The applicant asserts the same argument that neither Young nor the prior art mentioned teach of a mixer that is integrated into a

headset. The examiner has addressed this argument in (1) above. Therefore, the rejections using the prior art cited will be maintained using that art.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1,2,8,9, and 11are rejected under 35 U.S.C. 103(a) as being unpatentable over Young (U.S. Patent 5,694,467).

Regarding claim 1, Young discloses an apparatus comprising a mixer coupled to an external audio source to receive an external audio signal (telephone line ,26,27; Figure 1); a user audio preference interface (UAPI) coupled to the mixer to receiver an audio preference form a user, the audio preference being used to determine a specified relationship (column 4, lines 1-30); the mixer 22, (column 4; line 11) coupled to an ambient audio source to receive an ambient audio signal; the mixer to mix the external audio signal and the ambient audio signal according to the specified relationship (Figure 1;column 4, lines 1-18); and a speaker (46; Figure 1) coupled to the mixer to emit the external audio signal and the ambient audio signal into the ear canal of the user after the external audio signal and the ambient audio signal have been mixed by the mixer. Although Young teaches of a mixer external to a headset, the MPEP, in section 2144.04 titled V. Making Portable, Integral, Separable, Adjustable, or Continuous, under part (B) states that the court has affirmed that is a matter of obvious engineering choice whether to

integrate elements of a structure. . Integrated is defined as "to join with something else" or "make part of a larger unit". Therefore Young's ambient audio source, mixer and speaker are an integrated assembly. Thus it would have been obvious to have the mixer integrated into the headset for the benefit of having a integrated headset.

Claim 2 claims the apparatus of claim 1, wherein the ambient audio source, the mixer, and the speaker are an integrated assembly. All elements of claim 2 are comprehended by claim 1.

Claim 8 claims the apparatus of claim 1, wherein the external audio source is selected from the group consisting of: a telephone; an audio playing device; and a personal electronic device. Young teaches of two external audio sources, one being the sound generating device (30) and the phone line (26, 27) (column 4, lines 1-18) (See abstract). All elements of claim 8 are comprehended by claim 1.

Claim 9 claims the apparatus of claim 1, wherein the ambient audio source is a microphone to capture ambient sound. As stated above apropos of claim 1, Young teaches that the microphone (42) provides ambient noise (column 4, line 11). All elements of claim 9 are comprehended by claim 1.

Regarding **claim 11**, Young discloses a method comprising receiving an external audio signal from an external audio source(Figure 1); receiving an ambient audio signal; mixing the external audio signal and the ambient audio signal according to a specified relationship, wherein the specified relationship is predetermined by a preference input by a user and wherein the mixing occurs within a headset(Figure 1; column 4, lines 1-30); and emitting the external audio signal and the ambient audio signal into an ear canal of the user after the external signal and the

ambient audio signal into an ear canal of the user after the external audio signal and the ambient audio signal have been mixed according to the specified relationship (column 4, lines 1-30). The method is obvious Although Young teaches of a mixer external to a headset, the MPEP, in section 2144.04 titled V. Making Portable, Integral, Separable, Adjustable, or Continuous, under part (B) states that the court has affirmed that is a matter of obvious engineering choice whether to integrate elements of a structure. . Integrated is defined as "to join with something else" or "make part of a larger unit". Therefore Young's ambient audio source, mixer and speaker are an integrated assembly. Thus it would have been obvious to have the mixer integrated into the headset for the benefit of having a integrated headset.

7. **Claim 3** is rejected under 35 U.S.C. 102(b) as being unpatentable over Young, III (U.S. Patent 5,694,467) in view of Rast (U.S. Patent Application 2001/0046304).

Regarding **claim 3**, Rast discloses a headset with a sound selective acoustical isolation system that enables blocking of noise and allows the user to determine whether or not he hears the external environment (page 8, paragraphs, 0055 and 0061). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to replace Young's headset with Rast's headset for the benefit of enabling the user to better distinguish between what noises are important for he or she to hear and what noises are non-essential.

8. **Claim 4** is rejected under 35 U.S.C. 102(b) as being unpatentable over Young, III (U.S. Patent 5,694,467) in view of Blum et al. (WO 99/53612).

Regarding **claim 4**, Blum teaches of a control (10,11) that enables the user to control the mixture of audio signals on the preference from hearing impaired and non-hearing impaired listeners (See abstract). Thus it would have been obvious to one of ordinary skill in the art at the

time of the invention to use Blum's method of mixing for the benefit of giving the user the option of deciding what he or she wanted mixed.

9. **Claim 5** is rejected under 35 U.S.C. 102(b) as being unpatentable over Young, III (U.S. Patent 5,694,467) in view of Soli et al. (U.S. Patent 6,563,931).

Regarding **Claim 5,** Soli discloses an auditory prosthesis and method comprising a filter 10 are rapidly adjusted during a human or user actuated adapting mode to provide for filtering of a selected unwanted component of the ambient auditory signal, such as constant background noise present in the user's environment (column 6, line 66-column7, line 15). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Young's apparatus to include a voice amplifier for the benefit of providing clear speaking and hearing capability.

10. **Claim 7** is rejected under 35 U.S.C. 102(b) as being unpatentable over Young, III (U.S. Patent 5,694,467) in view of Sugihara (U.S. Patent 6,218,971).

Regarding **claim 7**, Sugihara teaches of a digital mixer (17a) that is a DSP (column 3, lines 48-60). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Young's mixer so that it can function as a DSP for the benefit of being able to perform additional processing on the signals received.

11. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Young, III (U.S. Patent 5,694,467) in view of Prince (U.S. Patent 6,360,203).

Regarding **claim 10**, Prince teaches of using two microphones to measure ambient noise without a voice signal (column 1, lines 37-57). Thus it would have been obvious to one of

ordinary skill in the art at the time of the invention to modify Young's apparatus by incorporating another microphone as claimed for the benefit of enabling cancellation of noise.

12. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Young, III (U.S. Patent 5,694,467) in view of Rast (U.S. Patent Application 2001/0046304).

Claim 12 claims the method of claim 11 further comprising blocking entrance to the ear canal of the user by the ambient audio signal that has not been mixed according to the specified relations ship. Rast discloses a headset with a sound selective acoustical isolation system that enables blocking of noise and allows the user to determine whether or not he hears the external environment (page 8, paragraphs, 0055 and 0061). Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Rast's concept of blocking entrance for the benefit of enabling the user to better distinguish between what noises are important for he or she to hear and what noises are non-essential.

13. **Claims 14 and 15** are rejected under 35 U.S.C. 102(b) as being unpatentable over Young, III (U.S. Patent 5,694,467) in view of Soli et la. (U.S. Patent 6,563,931).

Regarding **Claims 14 and 15,** Soli discloses an auditory prosthesis and method comprising a filter 10 are rapidly adjusted during a human or user actuated adapting mode to provide for filtering of a selected unwanted component of the ambient auditory signal, such as constant background noise present in the user's environment (column 6, line 66-column7, line 33). Soli further teaches that the user, or other human, can activate the adapting mode of filter 10 by supplying activated control input 18. Activated control input 18 may simply be a push button switch which sends the activated control input 18 signal when the

button is, preferably momentarily, pushed. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Young's apparatus to include Soli's filter for the benefit of providing clear speaking and hearing capability.

14. **Claims 16-19** are rejected under 35 U.S.C. 102(b) as being unpatentable over Young, III (U.S. Patent 5,694,467) in view of Neoh (U.S. Patent 6,668,204).

Claim 16 claims the method of claim 11, further comprising compensating for a hearing defect of the user.

Claim 17 claims the method of claim 16, wherein the compensating is performed according to a preference input by the user.

Claim 18 claims the method of claim 16, wherein the compensating is performed according to a preference input by the user.

Claim 19 claims the method of claim 11 further comprising transmitting an outgoing audio signal form the user to the external audio source.

Regarding **claims 16-19**, Neoh teaches of a device and method to improve the listening experience for users of headphones or hearing aids comprising testing a user's hearing and optimizing the listening experience for the user. The coefficients could be downloaded to and stored within the hearing aids (See Abstract) (columns 3-5). The user can choose a frequency and is prompted to adjust the balance until that frequency is achieved (column 3, line 66-column 4 line 11). Even though Neoh doesn't particularly teach of a medical professional implementing the testing, it is well known that hearing test are mostly done with the assistance of a medical professional. It is obvious that an outgoing audio signal is transmitted form the user to the computer when determining the parameters that would best fit the listener's need. Thus it would

have been obvious modify Young's system to incorporated Neoh base unit for the benefit of enabling the user to calibrated his or her headset to meet his or her specific needs.

15. **Claims 20-22,23,24-26,27 and 29** are rejected under 35 U.S.C. 103 (a) as being unpatentable over Rast (U.S. Patent Application 2001/0046304).

Regarding **claims 20 and 23**, Rast discloses a system for selective control of acoustic isolation in various forms of headsets comprising a headset (10) (Figure 3, the electronics for the headphones) including a digital signal processor and micro-controller (62) (page 5, paragraph 0053) which reads on "a processing unit"; the processor and micro-controller (62) contains an internal program store (ROM), a random access memory (RAM) and a sound characterization memory (63). This reads on "a memory coupled to the processing unit through a bus". Even though Rast does not specifically teach of a bus coupling the memory to the processing unit, since the memory is contained in the processing unit it is inherent that their connection is through a bus. A bus is a circuit that connects the major components of a computer. The processing unit and memory are well known as major components of any computer. Therefore, it is obvious that a bus couples the memory and the processor/micro-controller. Rast further teaches of microphones (58a, 58b) that convert sound. Rast further teaches of an embodiment that the headset could mix the incoming audio with the ambient audio sounds (page 8, paragraph 61). Therefore, it would be obvious in the case of radio communication that the DSP/micro-controller would receive both the input audio signals (52a-52d) and the ambient signals from the microphones (58a and 58b). The headset used in the radio communication environment would read then on the "ambient-aware headset" as claimed. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Rast's headset and system for the

benefit of having a headset capable of radio communication without having the user lose audio contact with the environment.

Claims 21 and 22 claims the system of claim 20, further comprising a microphone communicatively coupled to the headset to transmit an outgoing audio signal from the user to the communication device. Rast teaches of microphones (58a, 58b) that convert sound within the external acoustical environment. Each microphone converts the received external sound to an external sound signal (page 2, paragraph 0014). He further teaches that the apparatus is readily embodied in various types of headsets, including communication, audio and noise cancellation. It is obvious that the signal can be transmitted to some communication device. Rast further teaches of a sound selective acoustical isolation system that enables blocking of noise and allows the user to determine whether or not he hears the external environment (paragraph 0053; page 8, paragraphs, 0055 and 0061). Therefore, there is obviously some sort of user interface and that data could be stored. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Rast's headset for the benefit of enabling clear communication.

Claim 24 claims the system of claim 23, wherein the communication apparatus is selected from the group comprising a wireless telephone signals transmission tower; and a wireless audio data signal transmission tower. Rast further teaches that the incoming audio source could be music over a wireless connection (column . It is obvious that if there is a wireless connection there is a corresponding signal tower. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to have the audio source be a wireless tower for the benefit of providing the user with the capability to use the headset remotely.

Claim 25 claims the system of claim 23, further comprising a microphone communicatively coupled to the headset to transmit an outgoing audio signal from the user to the communication device. Rast teaches of microphones (58a, 58b) that convert sound within the external acoustical environment. Each microphone converts the received external sound to an external sound signal (page 2, paragraph 0014). He further teaches that the apparatus is readily embodied in various types of headsets, including communication, audio and noise cancellation. It is obvious that the signal can be transmitted to some communication device. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Rast's headset for the benefit of enabling clear communication.

16. Regarding **claim 26**, Rast discloses a system for selective control of acoustic isolation in various forms of headsets comprising a headset (10) (Figure 3, the electronics for the headphones) including a digital signal processor and micro-controller (62) (page 5, paragraph 0053) which reads on "a processing unit"; the processor and micro-controller (62) contains an internal program store (ROM), a random access memory (RAM) and a sound characterization memory (63). Rast further teaches the headset receiving input from microphones (58a, 58b) that convert sound within the external acoustic environment and input audio source connections (52a-52d). This reads on receiving an external audio signal from an external audio source" and "receiving an ambient audio signal". Rast further teaches of an embodiment where the headset could mix the incoming audio with the ambient audio sounds (page 8, paragraph 61) so that the radio communication function is realized without the wearer losing audio contact with the environment. Therefore, it would be obvious in the case of radio communication that the DSP/micro-controller would receive both the input audio signals (52a-52d) and the ambient

signals from the microphones (58a and 58b) (paragraph 0053, 0061). The headset used in the radio communication environment would read then on the "mixing the external audio signal and the ambient audio signal according to a specified relationship" as claimed and "emitting the external audio signal and the ambient audio signal into an ear canal of a user after the external audio signal and the ambient audio signal have been mixed according to a specified relationship". Although he does not specifically teach of machine-readable medium, having instructions to execute the method, he does teach of a DSP/micro-controller, having a program store, ROM. It is obvious than that there is a machine-readable medium and that there are instructions stored therein. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Rast's headset and system for the benefit of having a headset capable of radio communication without having the user lose audio contact with the environment.

Claims 27 and 29 are claims the machine-readable medium of claim 26, wherein the method further comprises blocking entrance to the ear canal of the user by the ambient audio signal that has not been mixed according to a specified relationship. Rast discloses a headset with a sound selective acoustical isolation system that enables blocking of noise and allows the user to determine whether or not he hears the external environment (page 8, paragraphs, 0055 and 0061). As stated above apropos of claim 26, although he does not specifically teach of machine-readable medium, having instructions to execute the method, he does teach of a DSP/micro-controller, having a program store, ROM. It is obvious than that there is a machine-readable medium and that there are instructions stored therein. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to replace Young's headset with

Rast's headset for the benefit of enabling the user to better distinguish between what noises are important for he or she to hear and what noises are non-essential.

17. **Claim 28** is rejected under 35 U.S.C. 102(b) as being unpatentable over Rast (U.S. Patent Application 2001/0046304 in view of Soli et la. (U.S. Patent 6,563,931).

Claim 28 claims the machine-readable medium of claim 26, wherein the method further comprises at least one of the group consisting of: filtering noise from the ambient audio signal; and compensating for a hearing defect of the user. Soli discloses an auditory prosthesis and method comprising a filter 10 are rapidly adjusted during a human or user actuated adapting mode to provide for filtering of a selected unwanted component of the ambient auditory signal, such as constant background noise present in the user's environment (column 6, line 66-column7, line 33). Soli further teaches that the user, or other human, can activate the adapting mode of filter 10 by supplying activated control input 18. Activated control input 18 may simply be a push button switch which sends the activated control input 18 signal when the button is, preferably momentarily, pushed.). As stated above apropos of claim 26, although he does not specifically teach of machine-readable medium, having instructions to execute the method, he does teach of a DSP/micro-controller, having a program store, ROM. It is obvious than that there is a machine-readable medium and that there are instructions stored therein. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to use Soli's concept of a filter for the benefit of providing clear speaking and hearing capability.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 703-305-4359. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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7.

FORESTER W. ISEN
SUPERVISORY PATENT EXAMINER